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→ Design and implementation of generics for the .NET Common language runtime

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↑ ABSTRACT

The Microsoft.NET Common Language Runtime provides a shared type system, intermediate language and dynamic execution environment for the implementation and inter-operation of multiple source languages. In this paper we extend it with direct support for parametric polymorphism (also known as generics), describing the design through examples written in an extended version of the C# programming language, and explaining aspects of implementation by reference to a prototype extension to the runtime.










Our design is very expressive, supporting parameterized types, polymorphic static, instance and virtual methods, "F-bounded" type parameters, instantiation at pointer and value types, polymorphic recursion, and exact run-time types. The implementation takes advantage of the dynamic nature of the runtime, performing just-in-time type specialization, representation-based code sharing and novel techniques for efficient creation and use of run-time types.


Early performance results are encouraging and suggest that programmers will not need to pay an overhead for using generics, achieving performance almost matching hand-specialized code.

↑ REFERENCES












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- 1 The .NET Common Language Runtime. See website at <http://msdn.microsoft.com/net/>.
- 2 O. Agesen, S. Freund, and J. C. Mitchell. Adding parameterized types to Java. In Object-Oriented Programming: Systems, Languages, Applications (OOPSLA), pages 215-230. ACM, 1997.
-  3 Nick Benton , Andrew Kennedy , George Russell, Compiling standard ML to Java bytecodes, Proceedings of the third ACM SIGPLAN international conference on Functional programming, p.129-140, September 26-29, 1998, Baltimore, Maryland, United States
-  4 Gilad Bracha , Martin Odersky , David Stoutamire , Philip Wadler, Making the future safe for the past: adding genericity to the Java programming language, Proceedings of the 13th ACM SIGPLAN conference on Object-oriented programming, systems, languages, and applications, p.183-200, October 18-22, 1998, Vancouver, British Columbia, Canada
-  5 Peter Canning , William Cook , Walter Hill , Walter Olthoff , John C. Mitchell, F-bounded polymorphism for object-oriented programming, Proceedings of the fourth international conference on Functional programming languages and computer architecture, p.273-280, September 11-13, 1989, Imperial College, London, United Kingdom
-  6 Robert Cartwright , Guy L. Steele, Jr., Compatible genericity with run-time types for the Java programming language, Proceedings of the 13th ACM SIGPLAN conference on Object-oriented programming, systems, languages, and applications, p.201-215, October 18-22, 1998, Vancouver, British Columbia, Canada
- 7 R. C. H. Connor. Types and Polymorphism in Persistent Programming Systems. PhD thesis, University of St. Andrews, 1990.
-  8 Andrew D. Gordon , Don Syme, Typing a multi-language intermediate code, Proceedings of the 28th ACM SIGPLAN-SIGACT symposium on Principles of programming languages, p.248-260, January 2001, London, United Kingdom
-  9 Robert Harper , Greg Morrisett, Compiling polymorphism using intensional type analysis, Proceedings of the 22nd ACM SIGPLAN-SIGACT symposium on Principles of programming languages, p.130-141, January 23-25, 1995, San Francisco, California, United States
-  10 Xavier Leroy, Unboxed objects and polymorphic typing, Proceedings of the 19th ACM SIGPLAN-SIGACT symposium on Principles of programming languages, p.177-188, January 19-22, 1992, Albuquerque, New Mexico, United States
- 11 Tim Lindholm , Frank Yellin, Java Virtual Machine Specification, Addison-Wesley Longman Publishing Co., Inc., Boston, MA, 1999
- 12 Y. Minamide. Full lifting of type parameters. Technical report, RIMS, Kyoto University, 1997.
-  13 Joseph A. Bank , Andrew C. Myers , Barbara Liskov, Parameterized types for Java, Proceedings of the 24th ACM SIGPLAN-SIGACT symposium on Principles of programming languages, p.132-145, January 15-17, 1997, Paris, France
-  14 Martin Odersky , Philip Wadler, Pizza into Java: translating theory into practice, Proceedings of the 24th ACM SIGPLAN-SIGACT symposium on Principles of programming languages, p.146-159, January 15-17, 1997, Paris, France
- 15 Martin Odersky, Enno Runne, and Philip Wadler. Two Ways to Bake Your Pizza - Translating Parameterised Types into Java. Technical Report CIS-97-016, University of South Australia, 1997.

- 16  Mirko Viroli , Antonio Natali, Parametric polymorphism in Java: an approach to translation based on reflective features, Proceedings of the 15th ACM SIGPLAN conference on Object-oriented programming, systems, languages, and applications, p.146-165, October 2000, Minneapolis, Minnesota, United States
- 17 M. Viroli and A. Natali. Parametric polymorphism in Java through the homogeneous translation LM: Gathering type descriptors at loadtime. Technical Report DEIS-LIA-00-001, Universit~ degli Studi di Bologna, April 2000.

↑ CITED BY 29

-  Nigamanth Sridhar, Dynamic instantiation-checking components, Proceedings of the 2006 ACM symposium on Applied computing, April 23-27, 2006, Dijon, France
-  David Tarditi , Greg Morrisett , Perry Cheng , Chris Stone , Robert Harper , Peter Lee, TIL: a type-directed, optimizing compiler for ML, ACM SIGPLAN Notices, v.39 n.4, April 2004
David R. Hanson , Todd A. Proebsting, A research C# compiler, Software—Practice & Experience, v.34 n.13, p.1211-1224, 10 November 2004
-  James Sasitorn , Robert Cartwright, Efficient first-class generics on stock Java virtual machines, Proceedings of the 2006 ACM symposium on Applied computing, April 23-27, 2006, Dijon, France
-  Andrew Kennedy , Claudio V. Russo, Generalized algebraic data types and object-oriented programming, ACM SIGPLAN Notices, v.40 n.10, October 2005
-  Nick Benton , Andrew Kennedy , Claudio V. Russo, Adventures in interoperability: the SML.NET experience, Proceedings of the 6th ACM SIGPLAN international conference on Principles and practice of declarative programming, p.215-226, August 24-26, 2004, Verona, Italy
Nigamanth Sridhar, Serfs: Dynamically-bound parameterized components, Journal of Systems and Software, v.80 n.5, p.736-749, May, 2007
Eric E. Allen , Robert Cartwright, Safe instantiation in generic Java, Science of Computer Programming, v.59 n.1-2, p.26-37, January 2006
-  Alex Potanin , James Noble , Robert Biddle, Generic ownership: practical ownership control in programming languages, Companion to the 19th annual ACM SIGPLAN conference on Object-oriented programming systems, languages, and applications, October 24-28, 2004, Vancouver, BC, CANADA
-  Cosmin E. Oancea , Stephen M. Watt, Parametric polymorphism for software component architectures, ACM SIGPLAN Notices, v.40 n.10, October 2005
-  Dachuan Yu , Andrew Kennedy , Don Syme, Formalization of generics for the .NET common language runtime, ACM SIGPLAN Notices, v.39 n.1, p.39-51, January 2004
-  Manuel Fähndrich , Michael Carbin , James R. Larus, Reflective program generation with patterns, Proceedings of the 5th international conference on Generative programming and component engineering, October 22-26, 2006, Portland, Oregon, USA
-  Shan Shan Huang , David Zook , Yannis Smaragdakis, cJ: enhancing java with safe type conditions, Proceedings of the 6th international conference on Aspect-oriented software development, March 12-16, 2007, Vancouver, British Columbia, Canada
-  Don Syme, Leveraging .NET meta-programming components from F#: integrated queries and interoperable heterogeneous execution, Proceedings of the 2006 workshop on ML, September 16-16, 2006, Portland, Oregon, USA

- ◆ [Brian Cabana , Suad Alagić , Jeff Faulkner, Parametric polymorphism for Java: is there any hope in sight?, ACM SIGPLAN Notices, v.39 n.12, December 2004](#)
- ◆ [Mads Torgersen , Christian Plesner Hansen , Erik Ernst , Peter von der Ahé , Gilad Bracha , Neal Gafter, Adding wildcards to the Java programming language, Proceedings of the 2004 ACM symposium on Applied computing, March 14-17, 2004, Nicosia, Cyprus](#)
- ◆ [Eric Allen , Jonathan Bannet , Robert Cartwright, A first-class approach to genericity, ACM SIGPLAN Notices, v.38 n.11, November 2003](#)
- ◆ [Wei-Ngan Chin , Florin Craciun , Siau-Cheng Khoo , Corneliu Popeea, A flow-based approach for variant parametric types, ACM SIGPLAN Notices, v.41 n.10, October 2006](#)
- ◆ [Kevin W. Hamlen , Greg Morrisett , Fred B. Schneider, Certified In-lined Reference Monitoring on .NET, Proceedings of the 2006 workshop on Programming languages and analysis for security, June 10-10, 2006, Ottawa, Ontario, Canada](#)
- ◆ [Jennifer Hamilton, Language integration in the common language runtime, ACM SIGPLAN Notices, v.38 n.2, February 2003](#)
- ◆ [Adriaan Moors , Frank Piessens , Wouter Joosen, An object-oriented approach to datatype-generic programming, Proceedings of the 2006 ACM SIGPLAN workshop on Generic programming, September 16-16, 2006, Portland, Oregon, USA](#)
- ◆ [Hamid Abdul Basit , Damith C. Rajapakse , Stan Jarzabek, Beyond templates: a study of clones in the STL and some general implications, Proceedings of the 27th international conference on Software engineering, May 15-21, 2005, St. Louis, MO, USA](#)
- ◆ [Ronald Garcia , Jaakko Jarvi , Andrew Lumsdaine , Jeremy G. Siek , Jeremiah Willcock, A comparative study of language support for generic programming, ACM SIGPLAN Notices, v.38 n.11, November 2003](#)
- ◆ [Hamid Abdul Basit , Stan Jarzabek, Detecting higher-level similarity patterns in programs, ACM SIGSOFT Software Engineering Notes, v.30 n.5, September 2005](#)
- ◆ [Jeremy G. Siek , Jeremy Siek , Andrew Lumsdaine, Essential language support for generic programming, ACM SIGPLAN Notices, v.40 n.6, June 2005](#)
- ◆ [Alex Potanin , James Noble , Dave Clarke , Robert Biddle, Generic ownership for generic Java, ACM SIGPLAN Notices, v.41 n.10, October 2006](#)
- ◆ [Anindya Banerjee , David A. Naumann, Ownership confinement ensures representation independence for object-oriented programs, Journal of the ACM \(JACM\), v.52 n.6, p.894-960, November 2005](#)
- ◆ [Atsushi Igarashi , Mirko Viroli, Variant parametric types: A flexible subtyping scheme for generics, ACM Transactions on Programming Languages and Systems \(TOPLAS\), v.28 n.5, p.795-847, September 2006](#)
- ◆ [Patrick Eugster, Type-based publish/subscribe: Concepts and experiences, ACM Transactions on Programming Languages and Systems \(TOPLAS\), v.29 n.1, p.6-es, January 2007](#)

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EAST Search History

S47	1	717/106.ccls. and (generic\$4 or parameter\$7) and (framework or "frame work") and (pars\$3 or tree or intermediate or il) and (class or object) and (parameter near5 generic)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 10:22
S48	3	717/106.ccls. and (generic\$4 or parameter\$7) and (framework or "frame work") and (pars\$3 or tree or intermediate or il or compil\$5) and (class or object) and (parameter near5 generic)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 10:25
S49	7	717/108.ccls. and (generic\$4 or parameter\$7) and (framework or "frame work") and (pars\$3 or tree or intermediate or il or compil\$5) and (class or object) and (parameter near5 generic)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 10:38
S50	6	S49 not S48	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 10:25
S51	3	717/118.ccls. and (generic\$4 or parameter\$7) and (framework or "frame work") and (pars\$3 or tree or intermediate or il or compil\$5) and (class or object) and (parameter near5 generic)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/03 08:19
S52	2	717/136.ccls. and (generic\$4 or parameter\$7) and (framework or "frame work") and (pars\$3 or tree or intermediate or il or compil\$5) and (class or object) and (parameter near5 generic)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 10:44
S53	1	717/140.ccls. and (generic\$4 or parameter\$7) and (framework or "frame work") and (pars\$3 or tree or intermediate or il or compil\$5) and (class or object) and (parameter near5 generic)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 10:45
S54	1	717/143.ccls. and (generic\$4 or parameter\$7) and (framework or "frame work") and (pars\$3 or tree or intermediate or il or compil\$5) and (class or object) and (parameter near5 generic)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 10:45

EAST Search History

S55	0	717/144.ccls. and (generic\$4 or parameter\$7) and (framework or "frame work") and (pars\$3 or tree or intermediate or il or compil\$5) and (class or object) and (parameter near5 generic)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 10:45
S56	2	717/146.ccls. and (generic\$4 or parameter\$7) and (framework or "frame work") and (pars\$3 or tree or intermediate or il or compil\$5) and (class or object) and (parameter near5 generic)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 10:46
S57	101429	"visual j#" pr	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 10:46
S58	15	".net" or "visual j#" or "visual j# .net"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 12:01
S59	1936	cil or smil	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 12:00
S60	1177	cil or msil	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 12:01
S61	158	("net" or "visual j#" or "visual j# .net" or net) and (cil or msil)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 12:02
S62	130	("net" or "visual j#" or "visual j# .net" or net) and (cil or msil) not microsoft.as.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 12:02
S63	787	((generic near3 class) or (templat\$3 near3 class)) and (parameter\$7 or declar\$5) same (intermediate or compil\$5 or il or tree)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/03 09:28

EAST Search History

S64	39	((generic near3 class) or (templat\$3 near3 class)) and (parameter\$7 or declar\$5) same (intermediate or compil\$5 or il or cil or tree or (language near2 neutral) or "intermediate language" or common) and ("virtual machine" or "runtime engine") and ((type or generic) near2 class) and ((unconstrain\$3 or constructed) near3 (type or class)) and (instantiat\$3 near3 (value or argument or parameter or type))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/03 08:34
S65	37	((generic near3 class) or (templat\$3 near3 class)) and (parameter\$7 or declar\$5) same (intermediate or compil\$5 or il or cil or tree or (language near2 neutral) or "intermediate language" or common) and ("virtual machine" or "runtime engine") and ((type or generic) near2 class) and ((unconstrain\$3 or constructed) near3 (type or class)) and (instantiat\$3 near3 (value or argument or parameter or type)) not microsoft.as.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/03 08:35
S66	36	("6063128").URPN.	USPAT	OR	OFF	2007/01/03 08:49
S67	34	("6063128").URPN. not microsoft.as.	USPAT	OR	OFF	2007/01/03 09:15
S68	1	"6760905".pn.	USPAT	OR	OFF	2007/01/03 09:15
S69	2	("6760905").URPN.	USPAT	OR	OFF	2007/01/03 09:15
S70	21	("5555415" "5632035" "5715460" "5724589" "5761502" "5822583" "5838918" "5864700" "6032152" "6138171" "6195794" "6275957" "6336139" "6405368" "6598225" "6601193" "6675228" "6760905" "6826761" "6829771" "6889373").PN. OR ("7100167").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/01/03 09:21
S71	10759	(generat\$3 or creat\$3 or develop\$4 or pars\$3) near3 ("intermediate language" or li or cil or ((intermediate or common or neutral) near3 (language or code or object or tokens or nodes or tree)) or (pars\$3 near3 tree))	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/03 09:25

EAST Search History

S72	11785	(generat\$3 or creat\$3 or develop\$4 or pars\$3 or compil\$5) near3 ("intermediate language" or li or cil or ((intermediate or common or neutral) near3 (language or code or object or tokens or nodes or tree)) or (pars\$3 near3 tree))	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/03 09:26
S73	6831	(generat\$3 or creat\$3 or develop\$4 or pars\$3 or compil\$5) near3 ("intermediate language" or li or cil or ((intermediate or common or neutral) near3 (language or code or object or tokens or nodes or tree)) or (pars\$3 near3 tree)) and (java or ".net" or "j#" or "virtual machine" or "runtime engine")	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/03 09:29
S74	438	(generat\$3 or creat\$3 or develop\$4 or pars\$3 or compil\$5) near3 ("intermediate language" or li or cil or ((intermediate or common or neutral) near3 (language or code or object or tokens or nodes or tree)) or (pars\$3 near3 tree)) and (java or ".net" or "j#" or "virtual machine" or "runtime engine") and ((generic near3 class) or (templat\$3 near3 class) or (parameter\$7 near3 class) or (shell near3 class))	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/03 09:30
S75	157	(generat\$3 or creat\$3 or develop\$4 or pars\$3 or compil\$5) near3 ("intermediate language" or li or cil or ((intermediate or common or neutral) near3 (language or code or object or tokens or nodes or tree)) or (pars\$3 near3 tree)) and (java or ".net" or "j#" or "virtual machine" or "runtime engine") and ((generic near3 class) or (templat\$3 near3 class) or (parameter\$7 near3 class) or (shell near3 class)) and 717/???.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/03 09:31

EAST Search History

S76	143	(generat\$3 or creat\$3 or develop\$4 or pars\$3 or compil\$5) near3 ("intermediate language" or li or cil or ((intermediate or common or neutral) near3 (language or code or object or tokens or nodes or tree)) or (pars\$3 near3 tree)) and (java or ".net" or "j#" or "virtual machine" or "runtime engine") and ((generic near3 class) or (templat\$3 near3 class) or (parameter\$7 near3 class) or (shell near3 class)) and 717/???ccls. not microsoft.as.	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/03 09:31
S77	117	(generat\$3 or creat\$3 or develop\$4 or pars\$3 or compil\$5) near3 ("intermediate language" or li or cil or ((intermediate or common or neutral) near3 (language or code or object or tokens or nodes or tree)) or (pars\$3 near3 tree)) and (java or ".net" or "j#" or "virtual machine" or "runtime engine") and ((generic near3 class) or (templat\$3 near3 class) or (parameter\$7 near3 class) or (shell near3 class)) and 717/???ccls. not microsoft.as. and "source code"	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/03 13:07
S78	3450	((generic near3 class) or (templat\$3 near3 class) or (parameter\$7 near3 class) or (shell near3 class)) and (queue or dictionary or stack)	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/03 13:08
S79	141249	((generic near3 class) or (templat\$3 near3 class) or (parameter\$7 near3 class) or (shell near3 class)) and (queue or dictionary or stack) (first and second) near3 source	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/03 13:09
S80	244	((generic near3 class) or (templat\$3 near3 class) or (parameter\$7 near3 class) or (shell near3 class)) and (queue or dictionary or stack) and (first and second) near3 source	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/03 13:09
S81	6	defin\$5 near3 (parameter or argument or value) same ((generic near3 class) or (templat\$3 near3 class) or (parameter\$7 near3 class) or (shell near3 class)) and (queue or dictionary or stack) and (first and second) near3 source	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/03 13:43
S82	1	"6760905".pn.	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/03 13:43

EAST Search History

S83	2	("6760905").URPN.	USPAT	OR	OFF	2007/01/03 13:44
S84	21	("5555415" "5632035" "5715460" "5724589" "5761502" "5822583" "5838918" "5864700" "6032152" "6138171" "6195794" "6275957" "6336139" "6405368" "6598225" "6601193" "6675228" "6760905" "6826761" "6829771" "6889373").PN. OR ("7100167"). URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/01/03 13:45
S85	16	gj same type same parameter	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 11:16
S86	83	ecma and (cli or clr)	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 11:17
S87	52	ecma and (cli or clr) not microsoft. as.	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 11:35
S88	32	ecma and (cli or clr) not microsoft. as. and (intermediate or neutral)	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 11:18
S89	0	("2004/0064830").URPN.	USPAT	OR	OFF	2007/01/08 11:34
S90	0	bracha.in. and gj	USPAT	OR	OFF	2007/01/08 11:34
S91	13	ecma and (cli or clr) not microsoft. as. and (JAVA and "J#")	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 14:44
S92	0	codebricks	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 14:46
S93	8	attardi.in.	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 14:47
S94	21	cisternino.in.	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 14:48
S95	1	"re parser"	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 14:49
S96	194	"reml"	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 14:50
S97	2857	generat\$5 same cil	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 14:54

EAST Search History

S98	12	generat\$5 same cil and (generic\$5 or parameteriz\$5 or shell or templat\$2) near3 (class or object)	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 15:15
S99	3735	generat\$5 same (common or intermediate or cil) and (generic\$5 or parameteriz\$5 or shell or templat\$2 or "parametric polymorphism") near5 (class or object)	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 15:19
S10 0	0	(java and ".net" and "j#")	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 15:19
S10 1	2521	generat\$5 same (common or intermediate or cil) and (generic\$5 or parameteriz\$5 or shell or templat\$2 or "parametric polymorphism") near5 (class or object) and (java or ".net" or "j#")	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 15:20
S10 2	179	generat\$5 same (common or intermediate or cil) same (generic\$5 or parameteriz\$5 or shell or templat\$2 or "parametric polymorphism") near5 (class or object) and (java or ".net" or "j#")	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 15:20
S10 3	171	generat\$5 same (common or intermediate or cil) same (generic\$5 or parameteriz\$5 or shell or templat\$2 or "parametric polymorphism") near5 (class or object) and (java or ".net" or "j#") not microsoft.as.	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 16:28
S10 4	12	(devillers and sylvain).in.	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 16:29
S10 5	4	(devillers and sylvain).in. and object and tree and generic	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 16:49
S10 6	3236778	"6760905".pn. nd (source or library or dll)	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 16:50
S10 7	1	"6760905".pn. and (source or library or dll)	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 16:58
S10 8	1	"6760905".pn. and (defin\$3 near3 parameter)	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 17:07
S10 9	1	"6760905".pn. and (queue or dictionary or stack or list)	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 17:12

EAST Search History

S11 0	1	"6760905".pn. and (edit\$3 or modify or modification or modify\$3)	US-PGPUB; OR USPAT; USOCR	ON	2007/01/08 17:17
S11 1	0	"6760905".pn. and (library or dll)	US-PGPUB; OR USPAT; USOCR	ON	2007/01/08 17:20
S11 2	165	msil	US-PGPUB; OR USPAT; USOCR	ON	2007/01/09 09:34
S11 3	114	msil not microsoft.as.	US-PGPUB; OR USPAT; USOCR	ON	2007/01/09 09:53
S11 4	17	("6412107" "6823504" "6327702" "6484313" "5740441" "6295642" "5668999" "6205577" "5768593"). pn. "20040083467" "20030084271" "20040098731" "20030182457" "20030120824" "20020120719" "20010047394"	US-PGPUB; OR USPAT; USOCR	ON	2007/01/09 10:05
S11 5	5	(eya			

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1965	(interoperability or interoperation or "multiple source languages") and intermediate and (generic\$4 or parameterized or polymorphic\$4)	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/19 15:20
L2	5	(interoperability or interoperation or "multiple source languages") same intermediate same (generic\$4 or parameterized or polymorphic\$4) and (bytecode or "byte code" or java or "net")	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/19 14:54
L3	4	(andrew adj kennedy).in.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/19 14:55
L4	0	(donald adj syne).in.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/19 15:10
L5	0	(don adj syne).in.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/19 15:13
L6	167	java and tiger	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/19 15:13
L7	62	java and tiger and generic	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/19 15:20
L8	2739	(interoperability or interoperation or "multiple source languages") and (generic\$4 or parameterized or polymorphic\$4 or option\$4) and (compil\$5 or pars\$3 or tree or ast or intermediate) and (bytecode or "byte code" or java)	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/19 15:34
L9	2	("6760905" "6018628").pn.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/19 15:32
L10	15	("5361351" "5600838" "5761511" "5864700" "5901314" "5940616" "5960197" "6032152" "6041179" "6073129" "6078744" "6151703" "6185609").PN. OR ("6760905").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/06/19 15:33
L11	12	("5339434" "5896522").PN. OR ("6018628").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/06/19 15:34

EAST Search History

L12	8	(interoperability or interoperation or heterogeneous or ((multiple or plurality) near3 (source or languages))) and (I10 or I11)	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/19 16:13
L13	0	cil and (I10 or I11)	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/19 15:41
L14	0	common adj (il or intermediate) and (I10 or I11)	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/19 16:12
L15	4	(interoperability or interoperation or heterogeneous or ((multiple or plurality) near3 (source or languages))) and curl.as.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/19 16:14
L16	17	compil\$5 and curl.as.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/19 16:25
L17	182	(cil or "common language runtime" or (common adj IL)) and (((plurality or variety or multiple or integration) near2 language) or "inter-operability" or interoperability or interoperable "multi-language" or "multi language") and (parameterized or parametric\$4 or polymorph\$6 or generic\$4 or (option\$4 near2 value) or (late near3 bind\$3))	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/19 17:28
L18	4	(cil or "common language runtime" or clr or (common adj IL)) and (((plurality or variety or multiple or integration) near2 language) or "inter-operability" or interoperability or interoperable "multi-language" or "multi language" or (different near3 language) or (integrat\$3 near3 language)) and (parameterized or parametric\$4 or polymorph\$6 or generic\$4 or (option\$4 near2 value) or (late near3 bind\$3)) and (net adj compil\$5) not microsoft.as.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/19 17:35
L19	3	"20040230958" "20050060695"	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/19 17:35
S1	0	Gadre.in. and "compiling source code using generic classees"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/12 17:37

EAST Search History

S2	2	"source code interoperability" and "generic class"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/12 17:38
S3	23	"source code interoperability"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/12 17:40
S4	1354	"generic class"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/12 17:38
S5	204	"generic class" and (java or bytecode)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/13 09:23
S6	115	"generic class" and (java or bytecode) and intermediate	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/12 17:39
S7	184	"generic class" and (java or bytecode) and (intermediate or tree or "object model" or token\$7 or neutral\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/12 17:49
S8	2	S3 and S7	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/12 17:40
S9	22	"source code interoperability" and (tree or intermediate or "object model")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/12 17:41
S10	22	"source code interoperability" and (tree or intermediate or "object model") and (java or bytecode or net or ".net")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/12 17:42

EAST Search History

S11	84	"generic class" and (java or bytecode) and (intermediate or tree or "object model" or token\$7 or neutral\$3 or il or cil or msil) and (interop\$7 or "virtual object" or oopl or "multi source code" or obje)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/13 09:24
S12	82	S11 not S3	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/12 17:52
S13	10	(defin\$3 or definition) near3 "generic class" and (java or bytecode)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/12 18:18
S14	12	(defin\$3 or definition) near3 "generic class" and framework	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/12 18:18
S15	6	S13 and S14	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/12 18:24
S16	4	S13 not S15	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/12 18:26
S17	6	S14 not S15	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/12 18:26
S18	8	(compil\$5 or transform\$5 or adapt\$3 or wrap\$4 or translat\$3) near2 "generic class" and (java or bytecode)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/13 08:01
S19	9	("6018628").URPN.	USPAT	OR	OFF	2006/07/13 07:54
S20	0	(compil\$5 or transform\$5 or adapt\$3 or wrap\$4 or translat\$3) near2 "template class" and generic and (java or bytecode)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/13 08:01

EAST Search History

S21	0	(compil\$5 or transform\$5 or adapt\$3 or wrap\$4 or translat\$3) near5 "template class" and generic and (java or bytecode)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/13 08:01
S22	38	(compil\$5 or transform\$5 or adapt\$3 or wrap\$4 or translat\$3) same ((generic or template) adj class) and (java or bytecode)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/13 08:02
S23	30	S22 not S18	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/13 08:45
S24	12	("6032152" "5960197" "6151703" "5600838" "5901314" "6760905").pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/13 08:46
S25	6	("6032152").URPN.	USPAT	OR	OFF	2006/07/13 08:49
S26	320	"generic object" and (java or bytecode)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/13 09:23
S27	0	generic near2 (class or object or oo or template) and (java or bytecode) and (intermediate or tree or "object model" or token\$7 or neutral\$3 or il or cil or msil) and (interoper\$7 or "multi source code" or obje) and (compil\$5 or transform\$5 or adapt\$3 or wrap\$4 or translat\$3) and paramter\$7 near3 (class or object or oo or template)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/13 09:27
S28	0	generic near5 (class or object or oo or template) and (java or bytecode) and (intermediate or tree or "object model" or token\$7 or neutral\$3 or il or cil or msil) and (compil\$5 or transform\$5 or adapt\$3 or wrap\$4 or translat\$3) and paramter\$7 same (class or object or oo or template)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/13 09:28

EAST Search History

S29	0	generic\$4 near5 (class or object or oo or template) and (java or bytecode) and (intermediate or tree or "object model" or token\$7 or neutral\$3 or il or cil or msil) and (compil\$5 or transform\$5 or adapt\$3 or wrap\$4 or translat\$3) and paramter\$7 same (class or object or oo or template)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/13 09:28
S30	12	generic\$4 and (class or object or oo or template) and (java or bytecode) and (intermediate or tree or "object model" or token\$7 or neutral\$3 or il or cil or msil) and (compil\$5 or transform\$5 or adapt\$3 or wrap\$4 or translat\$3) and paramter\$7 and (class or object or oo or template)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/13 09:35
S31	454	717/106.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/13 10:12
S32	448	717/108.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/13 09:35
S33	291	717/118.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/13 09:36
S34	534	717/136.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/13 09:36
S35	574	717/140.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/13 09:36
S36	294	717/143.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/13 09:36

EAST Search History

S37	170	717/144.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/13 09:37
S38	268	717/146.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/13 09:37
S39	83	717/147.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/13 09:38
S40	29	717/147.ccls. and generic\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/13 09:40
S41	59	717/147.ccls. and (generic\$4 or parameter\$7)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/13 09:40
S42	15	717/147.ccls. and (generic\$4 or parameter\$7) and (framework or "frame work")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/13 09:41
S43	2	("6609248").URPN.	USPAT	OR	OFF	2006/07/13 09:50
S44	96	717/106.ccls. and (generic\$4 or parameter\$7) and (framework or "frame work")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/13 10:12
S45	69	717/106.ccls. and (generic\$4 or parameter\$7) and (framework or "frame work") and (pars\$3 or tree or intermediate or il)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/07/13 10:13
S46	69	717/106.ccls. and (generic\$4 or parameter\$7) and (framework or "frame work") and (pars\$3 or tree or intermediate or il) and (class or object)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 10:14

EAST Search History

S47	1	717/106.ccls. and (generic\$4 or parameter\$7) and (framework or "frame work") and (pars\$3 or tree or intermediate or il) and (class or object) and (parameter near5 generic)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 10:22
S48	3	717/106.ccls. and (generic\$4 or parameter\$7) and (framework or "frame work") and (pars\$3 or tree or intermediate or il or compil\$5) and (class or object) and (parameter near5 generic)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 10:25
S49	7	717/108.ccls. and (generic\$4 or parameter\$7) and (framework or "frame work") and (pars\$3 or tree or intermediate or il or compil\$5) and (class or object) and (parameter near5 generic)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 10:38
S50	6	S49 not S48	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 10:25
S51	3	717/118.ccls. and (generic\$4 or parameter\$7) and (framework or "frame work") and (pars\$3 or tree or intermediate or il or compil\$5) and (class or object) and (parameter near5 generic)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/03 08:19
S52	2	717/136.ccls. and (generic\$4 or parameter\$7) and (framework or "frame work") and (pars\$3 or tree or intermediate or il or compil\$5) and (class or object) and (parameter near5 generic)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 10:44
S53	1	717/140.ccls. and (generic\$4 or parameter\$7) and (framework or "frame work") and (pars\$3 or tree or intermediate or il or compil\$5) and (class or object) and (parameter near5 generic)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 10:45
S54	1	717/143.ccls. and (generic\$4 or parameter\$7) and (framework or "frame work") and (pars\$3 or tree or intermediate or il or compil\$5) and (class or object) and (parameter near5 generic)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 10:45

EAST Search History

S55	0	717/144.ccls. and (generic\$4 or parameter\$7) and (framework or "frame work") and (pars\$3 or tree or intermediate or il or compil\$5) and (class or object) and (parameter near5 generic)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 10:45
S56	2	717/146.ccls. and (generic\$4 or parameter\$7) and (framework or "frame work") and (pars\$3 or tree or intermediate or il or compil\$5) and (class or object) and (parameter near5 generic)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 10:46
S57	101429	"visual j#" pr	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 10:46
S58	15	".net" or "visual j#" or "visual j# . net"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 12:01
S59	1936	cil or smil	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 12:00
S60	1177	cil or msil	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 12:01
S61	158	("net" or "visual j#" or "visual j# . net" or net) and (cil or msil)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 12:02
S62	130	("net" or "visual j#" or "visual j# . net" or net) and (cil or msil) not microsoft.as.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/13 12:02
S63	787	((generic near3 class) or (templat\$3 near3 class)) and (parameter\$7 or declar\$5) same (intermediate or compil\$5 or il or tree)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/03 09:28

EAST Search History

S64	39	((generic near3 class) or (templat\$3 near3 class)) and (parameter\$7 or declar\$5) same (intermediate or compil\$5 or il or cil or tree or (language near2 neutral) or "intermediate language" or common) and ("virtual machine" or "runtime engine") and ((type or generic) near2 class) and ((unconstrain\$3 or constructed) near3 (type or class)) and (instantiat\$3 near3 (value or argument or parameter or type))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/03 08:34
S65	37	((generic near3 class) or (templat\$3 near3 class)) and (parameter\$7 or declar\$5) same (intermediate or compil\$5 or il or cil or tree or (language near2 neutral) or "intermediate language" or common) and ("virtual machine" or "runtime engine") and ((type or generic) near2 class) and ((unconstrain\$3 or constructed) near3 (type or class)) and (instantiat\$3 near3 (value or argument or parameter or type)) not microsoft.as.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/03 08:35
S66	36	("6063128").URPN.	USPAT	OR	OFF	2007/01/03 08:49
S67	34	("6063128").URPN. not microsoft.as.	USPAT	OR	OFF	2007/01/03 09:15
S68	1	"6760905".pn.	USPAT	OR	OFF	2007/01/03 09:15
S69	2	("6760905").URPN.	USPAT	OR	OFF	2007/01/03 09:15
S70	21	("5555415" "5632035" "5715460" "5724589" "5761502" "5822583" "5838918" "5864700" "6032152" "6138171" "6195794" "6275957" "6336139" "6405368" "6598225" "6601193" "6675228" "6760905" "6826761" "6829771" "6889373").PN. OR ("7100167").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/01/03 09:21
S71	10759	(generat\$3 or creat\$3 or develop\$4 or pars\$3) near3 ("intermediate language" or li or cil or ((intermediate or common or neutral) near3 (language or code or object or tokens or nodes or tree)) or (pars\$3 near3 tree))	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/03 09:25

EAST Search History

S72	11785	(generat\$3 or creat\$3 or develop\$4 or pars\$3 or compil\$5) near3 ("intermediate language" or li or cil or ((intermediate or common or neutral) near3 (language or code or object or tokens or nodes or tree)) or (pars\$3 near3 tree))	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/03 09:26
S73	6831	(generat\$3 or creat\$3 or develop\$4 or pars\$3 or compil\$5) near3 ("intermediate language" or li or cil or ((intermediate or common or neutral) near3 (language or code or object or tokens or nodes or tree)) or (pars\$3 near3 tree)) and (java or ".net" or "j#" or "virtual machine" or "runtime engine")	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/03 09:29
S74	438	(generat\$3 or creat\$3 or develop\$4 or pars\$3 or compil\$5) near3 ("intermediate language" or li or cil or ((intermediate or common or neutral) near3 (language or code or object or tokens or nodes or tree)) or (pars\$3 near3 tree)) and (java or ".net" or "j#" or "virtual machine" or "runtime engine") and ((generic near3 class) or (templat\$3 near3 class) or (parameter\$7 near3 class) or (shell near3 class))	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/03 09:30
S75	157	(generat\$3 or creat\$3 or develop\$4 or pars\$3 or compil\$5) near3 ("intermediate language" or li or cil or ((intermediate or common or neutral) near3 (language or code or object or tokens or nodes or tree)) or (pars\$3 near3 tree)) and (java or ".net" or "j#" or "virtual machine" or "runtime engine") and ((generic near3 class) or (templat\$3 near3 class) or (parameter\$7 near3 class) or (shell near3 class)) and 717/???cccls.	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/03 09:31

EAST Search History

S76	143	(generat\$3 or creat\$3 or develop\$4 or pars\$3 or compil\$5) near3 ("intermediate language" or li or cil or ((intermediate or common or neutral) near3 (language or code or object or tokens or nodes or tree)) or (pars\$3 near3 tree)) and (java or ".net" or "j#" or "virtual machine" or "runtime engine") and ((generic near3 class) or (templat\$3 near3 class) or (parameter\$7 near3 class) or (shell near3 class)) and 717/???ccls. not microsoft.as.	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/03 09:31
S77	117	(generat\$3 or creat\$3 or develop\$4 or pars\$3 or compil\$5) near3 ("intermediate language" or li or cil or ((intermediate or common or neutral) near3 (language or code or object or tokens or nodes or tree)) or (pars\$3 near3 tree)) and (java or ".net" or "j#" or "virtual machine" or "runtime engine") and ((generic near3 class) or (templat\$3 near3 class) or (parameter\$7 near3 class) or (shell near3 class)) and 717/???ccls. not microsoft.as. and "source code"	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/03 13:07
S78	3450	((generic near3 class) or (templat\$3 near3 class) or (parameter\$7 near3 class) or (shell near3 class)) and (queue or dictionary or stack)	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/03 13:08
S79	141249	((generic near3 class) or (templat\$3 near3 class) or (parameter\$7 near3 class) or (shell near3 class)) and (queue or dictionary or stack) (first and second) near3 source	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/03 13:09
S80	244	((generic near3 class) or (templat\$3 near3 class) or (parameter\$7 near3 class) or (shell near3 class)) and (queue or dictionary or stack) and (first and second) near3 source	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/03 13:09
S81	6	defin\$5 near3 (parameter or argument or value) same ((generic near3 class) or (templat\$3 near3 class) or (parameter\$7 near3 class) or (shell near3 class)) and (queue or dictionary or stack) and (first and second) near3 source	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/03 13:43
S82	1	"6760905".pn.	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/03 13:43

EAST Search History

S83	2	("6760905").URPN.	USPAT	OR	OFF	2007/01/03 13:44
S84	21	("5555415" "5632035" "5715460" "5724589" "5761502" "5822583" "5838918" "5864700" "6032152" "6138171" "6195794" "6275957" "6336139" "6405368" "6598225" "6601193" "6675228" "6760905" "6826761" "6829771" "6889373").PN. OR ("7100167"). URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/01/03 13:45
S85	16	gj same type same parameter	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 11:16
S86	83	ecma and (cli or clr)	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 11:17
S87	52	ecma and (cli or clr) not microsoft. as.	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 11:35
S88	32	ecma and (cli or clr) not microsoft. as. and (intermediate or neutral)	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 11:18
S89	0	("2004/0064830").URPN.	USPAT	OR	OFF	2007/01/08 11:34
S90	0	bracha.in. and gj	USPAT	OR	OFF	2007/01/08 11:34
S91	13	ecma and (cli or clr) not microsoft. as. and (JAVA and "J#")	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 14:44
S92	0	codebricks	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 14:46
S93	8	attardi.in.	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 14:47
S94	21	cisternino.in.	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 14:48
S95	1	"re parser"	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 14:49
S96	194	"reml"	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 14:50
S97	2857	generat\$5 same cil	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 14:54

EAST Search History

S98	12	generat\$5 same cil and (generic\$5 or parameteriz\$5 or shell or templat\$2) near3 (class or object)	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 15:15
S99	3735	generat\$5 same (common or intermediate or cil) and (generic\$5 or parameteriz\$5 or shell or templat\$2 or "parametric polymorphism") near5 (class or object)	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 15:19
S10 0	0	(java and ".net" and "j#")	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 15:19
S10 1	2521	generat\$5 same (common or intermediate or cil) and (generic\$5 or parameteriz\$5 or shell or templat\$2 or "parametric polymorphism") near5 (class or object) and (java or ".net" or "j#")	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 15:20
S10 2	179	generat\$5 same (common or intermediate or cil) same (generic\$5 or parameteriz\$5 or shell or templat\$2 or "parametric polymorphism") near5 (class or object) and (java or ".net" or "j#")	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 15:20
S10 3	171	generat\$5 same (common or intermediate or cil) same (generic\$5 or parameteriz\$5 or shell or templat\$2 or "parametric polymorphism") near5 (class or object) and (java or ".net" or "j#") not microsoft.as.	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 16:28
S10 4	12	(devillers and sylvain).in.	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 16:29
S10 5	4	(devillers and sylvain).in. and object and tree and generic	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 16:49
S10 6	3236778	"6760905".pn. nd (source or library or dll)	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 16:50
S10 7	1	"6760905".pn. and (source or library or dll)	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 16:58
S10 8	1	"6760905".pn. and (defin\$3 near3 parameter)	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 17:07
S10 9	1	"6760905".pn. and (queue or dictionary or stack or list)	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 17:12

EAST Search History

S11 0	1	"6760905".pn. and (edit\$3 or modify or modification or modify\$3)	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 17:17
S11 1	0	"6760905".pn. and (library or dll)	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/08 17:20
S11 2	165	msil	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/09 09:34
S11 3	114	msil not microsoft.as.	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/09 09:53
S11 4	17	("6412107" "6823504" "6327702" "6484313" "5740441" "6295642" "5668999" "6205577" "5768593"). pn. "20040083467" "20030084271" "20040098731" "20030182457" "20030120824" "20020120719" "20010047394"	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/09 10:05
S11 5	5	(eyal and alaluf).in.	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/09 10:36
S11 6	1	"20030023958"	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/09 12:34
S11 7	1	"6760905".pn. and (bytecode or "byte code")	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/09 12:35